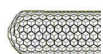


## Investment Mode 4: Research Infrastructure

A strong but flexible infrastructure is required to enable and stimulate new discoveries and innovations and to support the transition of those with commercial value from the laboratory to the marketplace. However, the cost of nanotechnology instrumentation, equipment, and facilities can be high, putting it out of the reach of researchers from small businesses and academic institutions. Government funding of infrastructure development that is accessible to virtually all researchers can substantially facilitate the creation of innovative technology and its transition to useful applications. An important focus of the NNI, therefore, is to develop measurements and standards, research instrumentation, modeling and simulation capabilities, and R&D user facilities. This type of funding has been used to support the National

Nanofabrication Users Network and the modeling and simulation Network for Computational Nanotechnology, both of which are sponsored by NSF. Table 3 lists NNI user facilities, principle investigators, and host institutions.

Research infrastructure funding is also being used by DOE to create a group of five Nanoscale Science Research Centers (NSRCs) that are colocated with existing major facilities at DOE laboratories across the country. The NSRCs will be operated as user facilities that are available to all researchers on a merit-reviewed basis. Other infrastructure dedicated to nanotechnology R&D that is under development at Federal laboratories includes a nanoscience facility at the Naval Research Laboratory and portions of the Advanced Measurement Laboratory at NIST.

**Table 3. Infrastructure: Nanotechnology R&D User Facilities**

<b>User Facility Name</b>	<b>Principal Investigator</b>	<b>Institution</b>
<b>NSF</b>		
National Nanofabrication Users Network (NNUN)*	Tiwari	Cornell University
	Harris	Howard University
	Plummer	Stanford University
	Fonash	Pennsylvania State University
	Hu	University of California, Santa Barbara
Network for Computational Nanotechnology	Lungstrom	Purdue University
	Hess	University of Illinois
	Dutton	Stanford University
	Fortes	University of Florida
	Lush	University of Texas, El Paso
	Ratner	Northwestern University
	Scott	Morgan State University
<b>DOE</b>		
Center for Functional Nanomaterials	Hwang	Brookhaven National Laboratory
Center for Integrated Nanotechnologies	Michalske	Sandia and Los Alamos National Laboratories
Center for Nanophase Materials Sciences	Lowndes	Oak Ridge National Laboratory
Center for Nanoscale Materials	Bader	Argonne National Laboratory
Molecular Foundry	Alivisatos	Lawrence Berkeley National Laboratory
<b>NIST</b>		
NIST Center for Neutron Research (NCNR)	Rowe	NIST

\* Note: The NNUN predates the NNI, but is funded under the NNI through 2003. In 2004, the NNUN will be expanded to create the National Nanotechnology Infrastructure Network.